

2.1 Aesthetics and Visual Quality

This section considers impacts to aesthetics and visual resources and potential effects to the visual character of the project site that could result from the proposed project. The information and analysis in this section have been compiled based on an understanding of the visual character of areas best suited for wind turbine s and an understanding of the key concepts of the proposed project.

2.1.1 Existing Conditions

The County is a visually diverse region with a dramatic coastline, mountains, and desert. It is also rich in natural open space, topographic resources, scenic highways, scenic vistas, and other diverse aesthetic resources. These natural features contribute greatly to the overall quality of the existing visual setting.

Scenic Resources

Scenic resources are located throughout the County. Public agencies and planning policies establish visual resource management objectives in order to protect and enhance public scenic resources. Goals, objectives, policies, implementation strategies, and guidance are typically contained in general plans, resource management plans, and local specific plans.

Scenic Vista

Viewsheds and visible components of landscape within a viewshed, including the underlying landform and overlaying land cover, establish the visual environment for the scenic vista. A vista is a view from a particular location or composite views along a roadway or trail. Scenic vistas often refer to views of natural lands, but may also be compositions of natural and developed areas, or even entirely of developed and unnatural areas, such as a scenic vista of a rural town and surrounding agricultural lands. The items that can be seen within a vista are visual resources.

Scenic Highway

State scenic highways refer to those highways that are officially designated by the California Department of Transportation (Caltrans) as scenic (Caltrans California Scenic Highway Program). Generally, the area defined within a state scenic highway is the land adjacent to and visible from the vehicular right-of-way. The dimension of a scenic highway is usually identified using a motorist's line of vision, but a reasonable boundary is selected when the view extends to the distant horizon. The scenic highway corridor extends to the visual limits of the landscape abutting the scenic highway.

Resource Conservation Areas

Certain areas in the County have been designated as Resource Conservation Areas (RCAs) for purposes of informing future planning decisions. RCAs include, but are not limited to, areas of aesthetic quality, areas with groundwater problems, coastal wetlands, native wildlife habitats, areas with construction quality sand, areas with astronomical dark skies, scenic geological formations, and significant archaeological and historical sites.

Natural Landforms

Natural landform features that are located throughout the County include important geological and scenic landform features, hillsides and ridgelines, canyons, creeks, prominent trees, and watershed areas.

Open Space Preserves and Reserves, Parks

Open space includes, but is not limited to, areas of outstanding scenic, historic, and cultural value; areas particularly suited for park and recreation purposes, including access to lakeshores, rivers, and streams; and areas that serve as links between major recreation and open space reserves, including utility easements, banks of rivers and streams, trails, and scenic highway corridors. The County also has a system of 18 open space preserves and reserves that are distributed primarily in the western and central areas of the County. There are a number of regional parks that contain important historical or cultural sites and often museums and/or interpretive centers.

Regional Trails

Regional Trails cover long distances, transcend community and/or municipal borders, have state or national significance, and provide important connections to existing parks, open space preserves, and other visual resources. The regional trails system is shown in Figure 2.1-1, Regional Trails Map.

Visual Character

The County has three distinctive geographic regions that provide a backdrop for visual resources, as defined in the County's General Plan: the low-lying coastal plain, the mountainous peninsular range, and the lowlands of the desert. The diversity of these regions provides County residents and visitors with an array of natural vistas and scenic environments that provide a unique aesthetic collection from the ocean to the desert. Urban land uses are focused in the western third of the County, while the eastern two-thirds are largely undeveloped with mountains and desert dominating the landscape.

Primary aesthetic resources in the coastal plain region include coastlines, bays, lagoons, canyons, mesas, natural vegetation, historic or unique structures, and agricultural lands. Notable scenic resources in the peninsular range foothills include the Otay River, Sweetwater River, upper San Diego River, Upper and Lower Otay Lakes, Sweetwater Reservoir, Lake Hodges, and San Vicente Reservoir. Scenic resources in the higher elevation of the peninsular range region are plentiful, including large open spaces such as Cleveland National Forest, Agua Tibia Wilderness Area, San Mateo Canyon Wilderness, Palomar Mountain State Park, Cuyamaca Rancho State Park, and various County reserves and parks, as well as the large water bodies of El Capitan Reservoir, Barrett Lake, Lake Morena, Lake Cuyamaca, and Lake Henshaw. Most of the desert region is located within the Anza-Borrego Desert State Park, a valuable visual resource providing scenic beauty for many visitors. The desert region also provides expansive views characterized by dramatic landforms, native desert habitat, and low desert valleys.

Viewer Groups

Sensitive viewpoints that could be affected by implementation of the Zoning Ordinance amendment include surrounding residences, recreational areas, and designated scenic roads in the vicinity of future wind turbine projects. Viewer groups would include stationary viewers located on residential, commercial, and agricultural uses and mobile viewers on surrounding roads, highways, and recreational/hiking trails.

Viewer Response

Viewer response is composed of two elements: viewer sensitivity and viewer exposure. Viewer sensitivity is defined as the viewer's concern for scenic quality and the viewer's response to change in the visual resources that make up the view. Local values and goals may confer visual significance on landscape components and areas that would otherwise appear unexceptional in a visual resource analysis.

Viewer exposure is typically assessed by measuring the number of viewers exposed to the resource change, type of viewer activity, duration of views, speed at which the viewer moves, and position of the viewer. High viewer exposure heightens the importance of early consideration of design, and architecture and their roles in managing the visual resource effects of a project.

Dark Skies

Dark skies are a natural resource in San Diego County and are essential to the study of the celestial bodies. The maintenance of dark skies in San Diego County is vital to the two world-class observatories that depend on them for astronomical research: Palomar and Mount Laguna

Observatories. The County is committed to ensuring that these two valuable research observatories continue to operate and function for future generations.

Nighttime light is produced primarily by upward pointing or upward reflected light from outdoor lighting. This type of lighting illuminates the nighttime sky from below, just as the sun does from above in the daytime, and can be detrimental to astronomical observations by impacting dark skies. Nighttime light that spills outside its intended area can be annoying to neighbors and potentially harmful to motorists, cyclists, and pedestrians. Further, the health of natural wildlife can also be adversely affected from nighttime lighting. Nighttime lighting in excess of what is necessary for its purpose is called light pollution.

The County Light Pollution Code (LPC), also known as the Dark Sky Ordinance, was adopted "to minimize light pollution for the enjoyment and use of property and the night environment by the citizens of San Diego County and to protect the Palomar and Mount Laguna observatories from the effects of light pollution that have a detrimental effect on astronomical research by restricting the permitted use of outdoor light fixtures on private property" (County Code, section 59.101 et seq.).

2.1.2 Regulatory Setting

Federal Regulations

Federal Aviation Administration

The Federal Aviation Administration (FAA) has strict notification policies and standards for marking and lighting structure to promote aviation safety. Code of Federal Regulations Title 14 Part 77.9 states that any person/organization who proposes any of the following construction or alterations must file notice with the FAA:

- Any construction or alteration exceeding 200 feet above ground level
- Any construction or alteration:
 - Within 20,000 feet of a public use or military airport that exceeds a 100:1 surface from any point on the runway of each airport with its longest runway more than 3,200 feet
 - Within 10,000 feet of a public use or military airport that exceeds a 50:1 surface from any point on the runway of each airport with its longest runway no more than 3,200 feet
- Within 5,000 feet of a public use heliport that exceeds a 25:1 surface

- Any highway, railroad, or other traverse way whose prescribed adjusted height would exceed the above noted standards
- When requested by the FAA
- Any construction or alteration located on a public use airport or heliport regardless of height or location.

Chapter 13 of FAA Advisory Circular 70/7460-1K (FAA 2007) is dedicated to marking and lighting wind turbine farms (wind turbine farms are defined as wind turbine developments containing three or more turbines of heights over 200 feet aboveground level). As listed in Chapter 13, general standards established for wind turbine farm lighting include:

- Not all wind turbine units within an installation or farm need to be lighted.
- Obstruction lights within a group of wind turbines should have unlighted separations or gaps of not more than ½ statute mile of the integrity of the group appearance is to be maintained. This is especially critical if the arrangement of objects is essentially linear.
- Nighttime wind turbine obstruction lighting should consist of the preferred FAA L-864 aviation red-colored flashing lights (20–40 flashes per minute is the standard flashing range for this lighting type).
- Daytime lighting of wind turbine farms is not required as long as the turbine structures are painted in a bright white color or light off-white color most often found on wind turbines.
- Light fixtures should be placed as high as possible on the turbine nacelle, so as to be visible from 360 degrees.
- (For wind turbine farms in a linear turbine configuration) place a light on each turbine positioned at each end of the line or string of turbines. In the event that the last segment is significantly short, push the lit turbine back toward the starting point to present a well-balanced string of lights. High concentrations of lights should be avoided.

Local Regulations

County of San Diego General Plan

The General Plan provides guidance for the preservation of visual resources. The General Plan includes community and subregional plans, which include goals, policies, and recommendations to guide development of a region. These community plans identify a variety of specific planning considerations that may include guidelines for protecting visual character and quality through development guidelines designed to minimize adverse aesthetic affects. The General Plan also includes specific guidelines for protecting scenic corridors and dark skies.

San Diego County General Plan, Conservation and Open Space Element

The General Plan's Conservation and Open Space Element includes (1) a comprehensive County Scenic Highway System, (2) goals and policies to preserve scenic resources, (3) goals and policies to protect ridgelines and hillsides, and (4) goals and policies for the protection of dark skies. The General Plan goals and policies for visual resources are provided in COS-11 through COS-13 of the Conservation and Open Space Element.

San Diego County Zoning Ordinance

The County Zoning Ordinance contains several sections that pertain to aesthetic character and resources. These sections are summarized below.

County Zoning Ordinance, Sections 5200–5212, Scenic Area Regulations, regulate development in areas of high scenic value to exclude incompatible uses and structures, and preserve and enhance the scenic resources in adjacent areas. The regulations apply to areas of unique scenic value, including, but not limited to, scenic highway corridors designated by the County General Plan; critical viewshed and prime viewshed areas as designated on the Local Coastal Program Land Use Plan; and areas adjacent to significant recreational, historic, or scenic resources, including, but not limited to, federal and state parks.

County Zoning Ordinance, Sections 5750–5758, Community Design Review Area Regulations include provisions to provide for the maintenance and enhancement of a community's individual visual character and identity. The provisions require that a site plan be submitted for development within those areas having a Community Design Review Area Special Designator (Designator B).

County Zoning Ordinance, Sections 5900–5910, Adopted 11-18-81, Design Review Area Regulations include provisions to ensure that future structures and development of a site will complement not only the site to be developed but also the surrounding areas and existing development. The provisions require that a site plan be submitted for certain discretionary project applications within those areas having a "D" zoning designator, indicating the need for design review. The regulation requires that the proposed site plan be reviewed against specific criteria to ensure that it will complement the site to be developed, the surrounding area, and any existing development.

County Zoning Ordinance, Sections 5700–5749, Historic/Archaeological Landmark and District Area Regulations, include provisions intended to identify, preserve, and protect the historic, cultural, archaeological, and/or architectural resource values of designated landmarks and districts and encourages compatible uses and architectural design. Areas designated by the Historic/Archaeological Landmark District have an "H" special area designator while areas

within a Specific Historic District are noted with a “J” special area designator. Where an “H” designator exists, the Historic Site Board, a board appointed by the Board of Supervisors, may provide advice to the Director of Planning and Land Use on historical/archaeological matters. The Historic/Archaeological Landmark and District Area Regulations include requirements for a site plan review for certain discretionary projects, site plan review criteria, and site plan waiver provisions.

County of San Diego Code of Regulatory Ordinances Sections 59.101–59.115, Light Pollution Code

The code was developed by the County Department of Planning and Land Use and Department of Public Works in cooperation with lighting engineers, astronomers, land use planners from San Diego Gas & Electric, Palomar and Mount Laguna observatories, and local community planning and sponsor groups to address and minimize the impact of new sources light pollution on nighttime views.

2.1.3 Analysis of Project Effects and Determination of Significance

The proposed project consists of amendments to the Zoning Ordinance related to wind turbines and temporary Meteorological Testing (MET) facilities. Under the proposed project, large turbines will continue to require approval of a Major Use Permit, while a small wind turbine or MET facility meeting the height designator of the zone in which it is located would be allowed without a discretionary permit. The impact analysis below has been separated into “Small Turbine(s)/MET Facilities” and “Large Turbine(s)” to reflect the distinction in the level of review (discretionary vs. non-discretionary) required for each use.

2.1.3.1 Scenic Vistas

Guidelines for the Determination of Significance

For the purpose of this Environmental Impact Report (EIR), the County’s *Guidelines for Determining Significance: Visual Resources* (County of San Diego 2007) applies to the direct and indirect impact analysis, as well as the cumulative impact analysis. A significant impact would result if:

- The project would have a substantial adverse effect on a scenic vista.

Analysis

As described in Section 2.1.1, the County contains visual resources affording opportunities for scenic vistas in every community. The areas designated RCA are the closest that the County

comes to specifically designating scenic vistas. Many public roads in the County currently have views of RCAs or expanses of natural resources that for the purposes of this EIR would have the potential to be considered scenic vistas. Numerous public trails are also available throughout the County which can provide views of scenic vistas. Two designated scenic highways are also located in the unincorporated County: These include SR-78 through the Anza-Borrego Desert State Park and SR-125 between I-8 and SR-94. Eligible scenic highways include portions of I-5, I-15, SR-94, I-8, SR-79, SR-78, and SR-76 within the unincorporated County. The County has identified additional roads as scenic in its County Scenic Highway System Priority List. Recreational areas available for public use throughout the County include parks, open space preserves and reserves. Additionally, the County contains a vast amount of publicly owned land that provides open space and visual relief from the human-made environment, including Cleveland National Forest in the Peninsular Ranges region and the Anza-Borrego Desert State Park in the Desert region. The proposed Zoning Ordinance amendment applies to the entire unincorporated County with regards to small turbines and to a significant portion of the unincorporated County with regard to large turbines (see Project Description Section 1.2); therefore, the project area includes every scenic vista in the County, including those visible from public roads, trails, scenic highways, and recreational areas.

Views from scenic vistas within the County include coastlines, bays, lagoons, canyons, mesas, natural vegetation, historic or unique structures, and agricultural lands in the Coastal Plain region; various water resources such as rivers and reservoirs, and large open spaces including County reserves and parks in the Peninsular Ranges; and expansive views characterized by dramatic landforms, native desert habitat, and low desert valleys in the Desert region. The proposed project would allow development of wind turbines and MET facilities that could obstruct, interrupt, or detract from a scenic vista. For example, a wind turbine or MET facility may have the potential to interrupt the view of a large open space area from an existing roadway or public trail. If a wind turbine or MET facility is inconsistent with the surrounding landscape, it could detract from the scenic elements of a vista. Additionally, new development such as wind turbines and MET facilities would have the potential to interrupt or detract from a scenic vista that previously did not include infrastructure or development.

Furthermore, the project includes a General Plan Amendment (GPA) that amends the Borrego Springs Community Plan policy relative to wind turbines and viewsheds. The GPA clarifies that large wind turbines are prohibited within the community in order to protect Montezuma Valley Road (S22), an important scenic resource, but to allow for the development of small wind turbines except as prohibited on ridgelines by the proposed Zoning Ordinance amendments. The GPA is included as Appendix B in this EIR.

Small Turbine(s)/MET Facilities

The proposed project would amend the Zoning Ordinance to allow small wind turbines or MET facilities without a discretionary permit if they meet the zoning verification requirements in the amended ordinance. Small turbine or MET facility projects that do not meet these criteria would continue to require discretionary review through the Administrative Permit process. These projects would be evaluated as part of the County's discretionary environmental review process (CEQA) and would be required to implement measures to minimize impacts to scenic vistas, as necessary.

Under circumstances where future small wind turbines or MET facilities would not require a discretionary permit, a small turbine or MET facility may be located near or within the viewshed of a scenic vista. The small wind turbines and MET facilities that meet the zoning verification requirements will be limited to a height of no more than 80 feet for small turbines and 200 feet for MET facilities, will have relatively small blades on a vertical or horizontal axis, and will be prohibited on ridgelines. In addition, these structures cannot include guy wires for structural support or aboveground power lines. However, these future facilities may introduce a new vertical element within the viewshed of a scenic vista that would not be subject to environmental or design review. A single small wind turbine or MET facility would not likely have a substantial visual impact on a scenic vista as these are usually expansive areas. However, the proposed Zoning Ordinance amendment would potentially allow for multiple small turbines or MET facilities within the viewshed of a scenic vista. Therefore, the proposed project may result in a potentially significant adverse impact to a scenic vista since it could potentially introduce new vertical elements within the viewshed of a scenic vista that would have the potential to interrupt or detract from a scenic vista that previously did not include infrastructure or development (**AES-1**).

Large Turbine(s)

The proposed project amends certain provisions of the County's Zoning Ordinance related to large turbine(s). These updates are necessary in order to address advancements in technology that have obviated many of the current provisions. The proposed amendments related to large wind turbines consist of updated definitions and requirements related to setbacks, noise, height and locations where large turbines are permissible. All future large turbine projects will continue to be required to obtain a Major Use Permit. As part of the County's discretionary review process, all future large turbine projects would also be subject to environmental review and would be required to implement measures to minimize visual impacts to the extent feasible. The proposed amendment to the Zoning Ordinance would, however, reduce required setbacks and increase allowable height that may directly or indirectly affect scenic vistas in the County. Proposed setback reductions may allow large turbines to locate near the viewshed of a scenic vista; while proposed increases in the height limit may result in taller vertical elements near or within the

viewshed of a scenic vista. Therefore, the proposed project may result in a potentially significant adverse impact to a scenic vista since it could potentially introduce taller vertical elements within close proximity to the viewshed of a scenic vista and large turbines would have the potential to interrupt or detract from a scenic vista that previously did not include infrastructure or development (AES-2).

2.1.3.2 Scenic Resources

Guidelines for the Determination of Significance

For the purpose of this EIR, the County's *Guidelines for Determining Significance: Visual Resources* (County of San Diego 2007) applies to the direct and indirect impact analysis, as well as the cumulative impact analysis. A significant impact would result if:

- The project would substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within the viewshed of a state scenic highway.

Analysis

The unincorporated County contains many scenic resources including mountains, watersheds, scenic geologic features, and RCAs that have been identified for protection because of their scenic value. Scenic resources throughout the County are summarized above in Section 2.1.1. Scenic resources are often found in County parks, habitat preserves, reservoirs, RCAs, MSCP areas, and other undeveloped lands throughout the County, but are found in more urbanized areas as well. Future wind turbine and MET facility development could have the potential to result in the removal or destruction of scenic neighborhood or community resources, such as historic resources, trees or rock outcroppings. In addition, future wind turbine and MET facility development along the two designated state scenic highways located in the County would have the potential to detract from the visual quality of the scenic highway by introducing new vertical elements that may block or distract from existing views.

Impacts to historic resources in the unincorporated County are described in Section 2.3, Cultural Resources. As discussed in this section, new development of wind turbines and MET facilities under the proposed Zoning Ordinance amendment would have the potential to result in the destruction of historical resources through development activities such as grading, clearing, demolition, alteration, or structural relocation. Development of wind turbines and MET facilities consistent with the proposed Zoning Ordinance amendment could result in a significant impact to these resources if it would block public views of these resources.

Similarly, trees and rock outcroppings are located throughout the County that would have the potential to be considered visual resources because community plans consider these resources as

contributing to the character and beauty of the communities. Some have been identified as RCAs for their scenic value. Examples of scenic trees are the Jesmond Dene oaks in the North County Metro Subregion and the eucalyptus groves in the Sweetwater Community Planning Area (CPA). Examples of scenic rock outcroppings include a scenic rock slab in Valley Center on Chaparral Ridge and the Mother Grundy rock formation in the Jamul/Dulzura area. Future wind turbine and MET facilities development could block public views of these resources, or it could result in the removal of the resource.

Small Turbine(s)/MET Facilities

The proposed project would amend the Zoning Ordinance to allow small wind turbines or MET facilities without a discretionary permit if they meet the zoning verification requirements in the amended ordinance. Small turbine or MET facility projects that do not meet these criteria would continue to require discretionary review through the Administrative Permit process. These projects would be evaluated as part of the County's discretionary environmental review process (CEQA) and would be required to implement measures to minimize impacts to scenic resources, as necessary.

Under circumstances where future small wind turbines or MET facilities would not require a discretionary permit, a small turbine or MET facility may be located near or within the viewshed of a scenic resource including the viewshed of a scenic highway. The small wind turbines and MET facilities that meet the zoning verification requirements will be limited to a height of no more than 80 feet for small turbines and 200 feet for MET facilities, will have relatively small blades on a vertical or horizontal axis, and will be prohibited on ridgelines. In addition, these structures cannot include guy wires for structural support or aboveground power lines. However, these future facilities may introduce a new vertical element within the viewshed of a scenic resource that would not be subject to environmental or design review. Therefore, the proposed Zoning Ordinance Amendment may result in a potentially significant adverse impact to a scenic resource since it could potentially remove or alter a scenic resource during the course of development. In addition, the increased height of wind turbine towers could block viewsheds that were previously available for viewing and/or previously undisturbed (**AES-3**).

Large Turbine(s)

The proposed project amends certain provisions of the County's Zoning Ordinance related to large turbine(s). These updates are necessary in order to address advancements in technology that have obviated many of the current provisions. The proposed amendments related to large wind turbines consist of updated definitions and requirements related to setbacks, noise, height and locations where large turbines are permissible. All future large turbine projects will continue to be required to obtain a Major Use Permit. As part of the County's discretionary review process,

all future large turbine projects would also be subject to environmental review and would be required to implement measures to minimize visual impacts to the extent feasible. The proposed amendment to the Zoning Ordinance would, however, reduce required setbacks and increase allowable height that may directly or indirectly affect scenic resources in the County. Proposed setback reductions may allow large turbines to locate near the viewshed of a scenic resource; while proposed increases in the height limit may result in taller vertical elements near the viewshed of a scenic resource. Therefore, the proposed project may result in a potentially significant adverse impact to a scenic resource since it could potentially remove or alter a scenic resource. In addition, the increased height of wind turbine towers could block viewsheds that were previously available for viewing and or previously undisturbed (**AES-4**).

2.1.3.3 Visual Character or Quality

Guidelines for the Determination of Significance

For the purpose of this EIR, the County's *Guidelines for Determining Significance: Visual Resources* (County of San Diego 2007) applies to the direct and indirect impact analysis, as well as the cumulative impact analysis. A significant impact would result if:

- The project would substantially degrade the existing visual character or quality of the site and its surroundings.

Analysis

The unincorporated County consists of a variety of visual characteristics and qualities. Each CPA and Subregion in the unincorporated County has a unique community character that could have the potential to be impacted by wind turbine projects and MET facilities developed pursuant to the proposed Zoning Ordinance amendment if the new development is incompatible with the existing character of the community or would result in the loss of or adverse change to scenic resources that contribute to the community's character. Community character impacts can occur from one improperly designed and located wind turbine or MET facility project. Impacts to community character can also occur from a transformation of a community and an overall change of its character. Future wind turbine and MET facility development is likely to be more intense in areas with the greatest natural wind resources, such as Boulevard, Ranchita and North Mountain. The rural character of these communities could be impacted by the development of large turbines, particularly the development of "wind farm" type projects which may introduce numerous turbines over a significant area and which may otherwise be undeveloped and/or include minimal development.

Small Turbine(s)/MET Facilities

The proposed project could potentially allow small wind turbines or MET facilities that could affect the visual character or quality of a site and its surroundings. However, the installation of new structures is not expected to require major grading or clearing, which would cause disturbances of soils and vegetation. Small roof-mounted wind turbines would not require grading or clearing and therefore would not degrade the visual character from these particular activities. Likewise, because MET facilities have a small footprint (limited to a maximum of 120 square feet, including fencing and any noise attenuation walls), MET facilities are not likely to require grading or clearing that would degrade the visual character. The small wind turbines and MET facilities that meet the zoning verification requirements will be limited to a height of no more than 80 feet for small turbines and 200 feet for MET facilities, will have relatively small blades on a vertical or horizontal axis, and will be prohibited on ridgelines. In addition, these structures cannot include guy wires for structural support or aboveground power lines. This would reduce some of the potential for visual character or quality impacts on or around the sites.

There is a potential for increased visual contrasts, view blockage, or skylining (showing the outline of the facilities) from sensitive viewing locations as a result of small wind turbines or MET facilities. Due to potential visual degradation impacts, the proposed project may result in significant impacts to visual character or quality (**AES-5**).

Large Turbine(s)

The proposed project amends certain provisions of the County's Zoning Ordinance related to large turbine(s). These updates are necessary in order to address advancements in technology that have obviated many of the current provisions. The proposed amendments related to large wind turbines consist of updated definitions and requirements related to setbacks, noise, height and locations where large turbines are permissible. All future large turbine projects will continue to be required to obtain a Major Use Permit. As part of the County's discretionary review process, all future large turbine projects would also be subject to environmental review and would be required to implement measures to minimize visual impacts to the extent feasible. The proposed amendment to the Zoning Ordinance would, however, reduce required setbacks and increase allowable height that may directly or indirectly affect increased visual contrasts, view blockage, or skylining (showing the outline of the facilities) from sensitive viewing locations. Therefore, due to potential visual degradation impacts, the proposed project may result in significant impacts to visual character or quality (**AES-6**).

2.1.3.4 *Light and Glare*

Guidelines for the Determination of Significance

For the purpose of this EIR, the County's *Guidelines for Determining Significance: Visual Resources* (County of San Diego 2007) applies to the direct and indirect impact analysis, as well as the cumulative impact analysis. A significant impact would result if:

- The project would create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area.

Analysis

Glare

Glare is a continuous or periodic intense light that is greater than the luminance to which the eyes are adapted and would have the potential to cause annoyance, discomfort or visual impairment, and can be a nuisance or hazard. Glare commonly occurs when an object is significantly brighter in contrast to the rest of the viewshed, such as light reflecting off an expanse of glass in a commercial or industrial development. Potentially reflective exterior building materials can affect motorists, cyclists, pedestrians or other persons within sight of the project depending on the position of the sun, outdoor lighting and/or building materials.

Lighting

Daytime lighting would not result in a substantial new source of light or result in light pollution or light trespass. However, excessive nighttime lighting would have the potential to result in light pollution, also called skyglow, which is the haze of light that surrounds highly populated areas and is the result of brightening of the night sky from both artificial (outdoor) and natural (atmospheric and celestial) light. Skyglow reduces the ability to see stars and other features of the nighttime sky, which is of particular importance to the Palomar Mountain and Mount Laguna Observatories located in San Diego County. Light pollution interferes with operation of the observatory telescopes, which can detect the faintest galaxies when dark skies are available. Excessive lighting would also have the potential to have an adverse impact on wildlife.

In addition, there are specific FAA lighting requirements for wind turbine projects as described in Section 2.1.2, Regulatory Setting.

Shadow Flicker

Shadow flicker is commonly defined as alternating changes in light intensity at a given stationary location. In order for shadow flicker to occur, three conditions must be met:

- The sun must be shining with no clouds obscuring the sun;
- The rotor blades must be spinning and be located between the receptor and the sun; and
- The receptor must be sufficiently close to the turbine to be able to distinguish a shadow created by the turbine.

Concerns are occasionally raised about adverse health effects caused by shadow flicker such as annoyance, stress and/or seizures in persons with photosensitive epilepsy. Concerns are also sometimes raised about shadow flicker on roadways distracting drivers and causing accidents. Refer to Section 2.6, Hazards and Hazardous Materials for further information.

Small Turbine(s)/MET Facilities

The proposed project would not allow exterior lights on small wind turbines or MET facilities unless required by law. Additionally, future facilities are required to comply with the County Light Pollution Code. The code addresses and minimizes the impact of new sources of light pollution on nighttime views. Compliance with the code is required prior to issuance of any building permit for any project. Small wind turbines and MET facilities developed under the proposed project would not reach a height exceeding 200 feet and therefore would not require FAA obstruction lighting. Therefore, the proposed project **would not result in a significant impact** relative to light or glare.

Large Turbine(s)

The proposed project would include exterior lights on large wind turbine(s) that are required by law. Large wind turbines are required to meet FAA height regulations and would be subject to the obstruction lighting or other forms of aviation impact avoidance including markers and paint colors or patterns, as necessary. Applicants would be required to submit a Notice of Proposed Construction or Alteration form (Form 7460-1) for FAA review. The FAA would make a finding on whether or not a future large wind turbine project would affect the National Airspace System. Because it is likely for future large wind turbines to meet the height threshold, FAA lighting would be required.

Pursuant to FAA Regulations (Advisory Circular 70/7460-1K, Obstruction Marking and Lighting), nighttime obstruction lighting would be required to provide night conspicuity and to assist pilots in identifying and avoiding wind turbines. In compliance with FAA lighting standards, flashing red lights (L-864) or white lights (L-865) would be used to light wind turbines and obstruction lighting need not be installed on all wind turbines. The lighting required for large wind turbines is specific to the project and dependent upon the number of structures and overall layout of design. Other forms of aviation impact avoidance include markers and paint colors or patterns.

Although residences may not be located immediately adjacent to future large wind turbines, nighttime lighting at these facilities could be visible to residences in the general area due to a lack of existing nighttime lighting in the area. Lighting may also be visible to recreationists or motorists in the general area. Also, the height of wind turbines and the repetitive flashing of FAA-required obstruction lighting may result in a strong, constant source of highly visible light, and nighttime views for area residents may be affected. Therefore, the long-term effects to nighttime views resulting from future large wind turbines would be potentially significant.

Future facilities are required to comply with the County Light Pollution Code. The County Light Pollution Code allows for compliance with federal and state requirements, such as FAA. The code addresses and minimizes the impact of new sources of light pollution on nighttime views. Compliance with the code is required prior to issuance of any building permit for any project.

Large wind turbine projects may result in significant shadow flicker effects if sensitive receptors are within 2,000 meters (6,562 feet) of the proposed turbines. Beyond 2,000 meters, the human eye would not be able to discern a shadow cast from a wind turbine. Therefore, the proposed project may result in significant impacts associated with light or glare due to compliance with FAA direction and shadow flicker effects (**AES-7**).

2.1.4 Cumulative Impact Analysis

The geographic scope of the cumulative impact analysis for aesthetics includes the immediate vicinity of view corridors, viewsheds, or scenic resources in the County, as well as areas surrounding the two observatories.

2.1.4.1 Scenic Vistas

Cumulative projects located in the San Diego region would have the potential to result in a cumulative impact to scenic vistas if in combination they would result in visual impacts within the viewshed of a scenic vista. Adjacent jurisdictions, including incorporated cities, adjacent counties, and federal and state-managed lands, have general plan policies, zoning ordinances, and other ordinances or regulations in place to protect scenic vistas within their jurisdictions. However, it cannot be assured that past, present and foreseeable future projects will be required to adhere to regulations that protect scenic vistas. For example, the Sunrise Powerlink Project, included in Table 1-4d, proposes the construction of new transmission lines through the Desert Subregion which would have the potential to detract from scenic vistas in the desert landscape. Development on tribal lands within the County also has the potential to result in the impacts to scenic vistas. Therefore, projects in the region would have the potential to result in cumulatively considerable impacts to scenic vistas.

Small Turbine(s)/MET Facilities

As described in Section 2.1.3.1, future small wind turbines and MET facilities would have the potential to result in impacts to scenic vistas. The proposed project would allow for three to five turbines to be developed on a legal lot as an accessory use to the primary use of the property without a discretionary permit, which may detract from a nearby scenic vista. Therefore, in combination with other past, present and foreseeable future projects, the proposed project would potentially contribute to a cumulatively considerable impact to scenic vistas (**AES-8**).

Large Turbine(s)

As described in Section 2.1.3.1, future large wind turbine(s) would have the potential to result in impacts to scenic vistas. The proposed project may allow future large turbine projects in close proximity to scenic vistas and introduce taller vertical elements which may contribute to cumulative impacts. Therefore, the proposed project would potentially contribute to a cumulatively considerable impact to scenic vistas (**AES-9**).

2.1.4.2 *Scenic Resources*

Cumulative projects located in the San Diego region would have the potential to result in a cumulative impact to scenic resources if in combination they would substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within the viewshed of a state scenic highway. Past, present, and foreseeable future projects are not all held to strict standards protecting scenic resources. For example, utility projects in the County or development projects in Mexico or on tribal lands sometimes have direct or indirect adverse effects on scenic resources in the region. Therefore, the cumulative projects in the region would have the potential to result in cumulatively considerable impacts to scenic resources.

Small Turbine(s)/MET Facilities

As described in Section 2.1.3.2, future small wind turbines and MET facilities would have the potential to result in impacts to scenic resources, including scenic highways. The proposed project would allow three to five turbines to be developed on a legal lot as an accessory use to the primary use of the property without a discretionary permit, which may affect nearby scenic resources. Therefore, the proposed project would potentially contribute to a cumulatively considerable impact to scenic resources (**AES-10**).

Large Turbine(s)

As described in Section 2.1.3.2, future large wind turbine(s) would have the potential to result in impacts to scenic resources, including scenic highways. Proposed setback reductions may allow

large turbine(s) to locate near the viewshed of a scenic resource; while proposed increases in allowed height may result in taller vertical elements near the viewshed of a scenic resource. Therefore, the proposed project would potentially contribute to a cumulatively considerable impact to scenic resources (**AES-11**).

2.1.4.3 *Visual Character or Quality*

Cumulative projects located in the County would have the potential to result in a cumulative impact to visual character or quality if, in combination, they would substantially degrade the existing visual character or quality of the site and its surroundings. The County's General Plan Update project identified significant unavoidable impacts to the visual character and quality of its communities throughout the unincorporated County. Therefore, the cumulative projects in the region would have the potential to result in cumulatively considerable impacts related to visual character and quality.

Small Turbine(s)/MET Facilities

As described above in Section 2.1.3.3, implementation of the proposed project would have the potential to degrade the existing visual character or quality of a site and its surroundings. The proposed project would allow three to five turbines to be developed on a legal lot as an accessory use to the primary use of the property without a discretionary permit, which could degrade the surrounding visual quality or character. Therefore, the proposed project would potentially contribute to a cumulatively considerable impact to visual character and quality within the project site and its surroundings (**AES-12**).

Large Turbine(s)

As described above in Section 2.1.3.3, implementation of the proposed project would have the potential to degrade the existing visual character or quality of a community. Proposed setback reductions and increases in allowable height may directly or indirectly affect long-term visibility of increased visual contrasts, view blockage, or skylining from sensitive viewing locations. Therefore, the proposed project would potentially contribute to a cumulatively considerable impact to visual character and quality within the project site and its surroundings (**AES-13**).

2.1.4.4 *Light and Glare*

The construction and operation of cumulative projects located in the San Diego region would have the potential to create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area. Impacts from glare are generally localized and not cumulative in nature. There are no known instances in the County unincorporated area where multiple projects have reflective materials in close proximity, thereby resulting in combined

effects of glare. Therefore, a cumulatively considerable impact related to glare has not occurred. However, new sources of nighttime light pollution in the San Diego region would result in a potential lighting impact to the Palomar Mountain and Mount Laguna Observatories. For example, new sources of lighting would be created from development of proposed new and expanded casino projects identified on tribal lands in San Diego County, which would be in operation at night. Despite lighting ordinances and other regulations pertaining to night lighting and mitigation measures that would reduce light pollution on a project by project basis, the combined effect of all cumulative projects in the San Diego region would be a cumulative increase in light pollution. Therefore, the cumulative projects in the region would have the potential to result in a cumulatively considerable impact associated with nighttime lighting.

Small Turbine(s)/MET Facilities

The project would not contribute to cumulatively considerable impacts on day or nighttime views because future small wind turbines and MET facilities will conform to the Light Pollution Code. The standards in the code are the result of this collaborative effort and establish an acceptable level for new lighting. Compliance with the code is required prior to issuance of any building permit for any project. Mandatory compliance for all new building permits ensures that this project, in combination with all past, present, and foreseeable future projects, will not contribute to a cumulatively considerable impact. Therefore, compliance with the code ensures that the project **would not result in a cumulative impact** that would adversely affect daytime or nighttime views in the area due to light or glare.

Large Turbine(s)

As described above in Section 2.1.3.4, implementation of the proposed project would have the potential to result in significant impacts associated with FAA lighting requirements and shadow flicker effects. Shadow flicker effects would be limited to just the immediate vicinity of the large turbine project location and, therefore, would not contribute to a cumulative issue related to light or glare. However, the lighting required for FAA compliance could contribute to the cumulatively considerable impacts associated with nighttime lighting described above (**AES-14**).

2.1.5 Significance of Impacts Prior to Mitigation

The proposed project would result in potentially significant impacts associated with visual resources, including scenic vistas, scenic resources, visual character or quality, and lighting prior to mitigation.

2.1.6 Mitigation Measures

2.1.6.1 Scenic Vistas

The proposed project would allow for development of small wind turbines and temporary MET facilities that could have significant adverse effects on scenic vistas. The proposed project would also alleviate current restrictions on large wind turbine projects that may directly or indirectly affect scenic vistas in the County. Mitigation measures (described below) have been identified that would reduce potentially significant impacts to scenic vistas, but not below a significant level.

Mitigation Measures

M-AES-1: During the environmental review process for future Major Use Permits for wind turbines, the County Guidelines for Determining Significance for Visual Resources and Dark Skies and Glare shall be applied. When aesthetic impacts are determined to be significant, feasible and appropriate project-specific mitigation measures shall be incorporated. Examples of standard mitigation measures within the County Guidelines include: siting/location considerations; minimizing development and grading of steep slopes; natural screening and landscaping; undergrounding utilities; inclusion of buffers; and lighting restrictions.

Infeasible Mitigation Measures

The following measures were considered in attempting to reduce impacts to scenic vistas to below a level of significance. However, the County has determined that these measures would be infeasible, as described below. Therefore, the following mitigation measures would not be implemented.

- Require a visual resource study for all small wind turbine projects and temporary MET facilities to ensure that impacts to scenic resources will be avoided or mitigated. This measure is not feasible as it would directly conflict with the project objectives to allow development of small wind turbines and temporary MET facilities without a discretionary permit.
- Prohibit large and small wind turbines, as well as temporary MET facilities, within the viewshed of scenic vistas. This measure is not feasible as it would conflict with the project objectives of facilitating the use of renewable wind energy within the County, maximizing the production of energy from renewable wind sources, and allowing development of small wind turbines and temporary MET facilities without a discretionary permit.

Because the measures listed above are infeasible, impacts would remain significant and unavoidable. Chapter 4, Project Alternatives, provides a discussion of alternatives to the proposed project that would result in some reduced impacts associated with scenic vistas as compared to the proposed project.

2.1.6.2 Scenic Resources

The proposed project would allow for development of small wind turbines and temporary MET facilities that could have significant adverse effects on scenic resources. The proposed project would also alleviate current restrictions on large wind turbine projects that may directly or indirectly affect scenic resources in the County. Mitigation measures (described below), have been identified that would reduce potentially significant impacts to scenic resources, but not below a significant level.

Mitigation Measures

Mitigation measure **M-AES-1** listed under Scenic Vistas is applicable to this issue and is incorporated here by reference. However, impacts to scenic resources would not be reduced to below a significant level.

Infeasible Mitigation Measures

The following measures were considered in attempting to reduce impacts to scenic vistas to below a level of significance. However, the County has determined that these measures would be infeasible, as described below. Therefore, the following mitigation measures would not be implemented.

- Require a visual resource study for all small wind turbine projects and temporary MET facilities to ensure that impacts to scenic resources will be avoided or mitigated. This measure is not feasible as it would directly conflict with the project objectives to allow development of small wind turbines and temporary MET facilities without a discretionary permit.
- Prohibit large and small wind turbines, as well as temporary MET facilities, near scenic resources. This measure is not feasible as it would conflict with the project objectives of facilitating the use of renewable wind energy within the County, maximizing the production of energy from renewable wind sources, and allowing development of small wind turbines and temporary MET facilities without a discretionary permit.

Because the measure listed above has been found to be infeasible, impacts would remain significant and unavoidable. Chapter 4, Project Alternatives, provides a discussion of alternatives to the proposed project that would result in some reduced impacts associated with scenic resources as compared to the proposed project.

2.1.6.3 Visual Character and Quality

The proposed project could allow for development of small wind turbines and temporary MET facilities that would have significant adverse effects on existing visual character and quality in the County. The proposed project would also alleviate current restrictions on large wind turbine projects that may directly or indirectly affect the visual character and quality of their surroundings. Mitigation measures (described below), have been identified that would reduce potentially significant impacts to visual character and quality, but not below a significant level.

Mitigation Measures

Mitigation measure **M-AES-1** listed under Scenic Vistas, is applicable to this issue and is incorporated here by reference. However, impacts to visual character and quality would not be reduced to below a significant level.

Infeasible Mitigation Measures

The following measures were considered in attempting to reduce impacts to visual character and quality to below a level of significance. However, the County has determined that these measures would be infeasible, as described below. Therefore, the following mitigation measures would not be implemented.

- Require a visual resource study for all small wind turbine projects and temporary MET facilities to ensure that impacts to scenic resources will be avoided or mitigated. This measure is not feasible as it would directly conflict with the project objectives to allow development of small wind turbines and temporary MET facilities without a discretionary permit.
- Require a community planning group design review process for small wind turbines and MET facilities. This measure is not feasible as it would directly conflict with the project objectives to allow development of small wind turbines and temporary MET facilities without a discretionary permit and to streamline and clarify the approval process for the development and operation of small wind turbines.
- Prohibit large and small wind turbines, as well as temporary MET facilities, that would degrade the visual character or quality of the site and its surroundings. This measure is not feasible as it would conflict with the project objectives of facilitating the use of renewable wind energy within the County, maximizing the production of energy from renewable wind sources, and allowing development of small wind turbines and temporary MET facilities without a discretionary permit.

Because the measures listed above have been found to be infeasible, impacts would remain significant and unavoidable. Chapter 4, Project Alternatives, provides a discussion of alternatives to the proposed project that would result in some reduced impacts associated with visual character and quality as compared to the proposed project.

2.1.6.4 *Light and Glare*

The proposed project would allow for the development of large wind turbines that could potentially result in significant impacts associated with lighting and shadow flicker. Mitigation measures (described below), have been identified that would reduce potentially significant impacts to visual character and quality, but not below a significant level.

Mitigation Measures

M-AES-2 Require that a Lighting Mitigation Plan be prepared as part of the Major Use Permit discretionary review process. The Lighting Mitigation Plan would demonstrate that the design and installation of all permanent lighting for large wind turbine ancillary facilities is such that light bulbs and reflectors are not visible from public viewing areas; lighting does not cause reflected glare; and illumination of the project facilities, vicinity, and nighttime sky is minimized. The Lighting Mitigation Plan would demonstrate consistency with the Light Pollution Code (Section 59.100 et al.) and Sections 6322 and 6324 of the Zoning Ordinance to ensure outdoor light fixtures emitting light into the night sky do not result in a detrimental effect on astronomical research and to ensure reflected glare and light trespass is minimized.

M-AES-3 Require that a Shadow Flicker Study be prepared as part of the Major Use Permit discretionary review process. The Shadow Flicker Study would utilize a shadow flicker model run to determine the potential shadow flicker that could occur at sensitive receptors within 2,000 meters (6,562 feet) of the proposed turbines. Due to the fact that some receptors may lie within 60° due north of the turbines, outside of the sun's path at any given point in the year, those receptors may be excluded from the study. Beyond 2,000 meters, the human eye would not be able to discern a shadow cast from a wind turbine.

The modeling should utilize many different inputs, including:

1. Real Data

- Actual coordinates of turbines
- Actual coordinates of receptors

- Actual topographic data
2. Conservative Assumptions
- Specifications of the turbines being considered with the highest hub height and longest rotor diameter
 - 100% turbine operation
 - No vegetative screening
 - Receptors can be impacted from all directions (i.e., “greenhouse mode”)
3. Realistic Features
- Actual wind data from a local meteorological tower to account for the percentage of time wind blows from each direction
 - National Weather Service sunshine probability data to approximate average cloud cover.

Infeasible Mitigation Measures

The following measures were considered in attempting to reduce impacts to visual character and quality to below a level of significance. However, the County has determined that these measures would be infeasible, as described below. Therefore, the following mitigation measures would not be implemented.

- Incorporate Obstacle Collision Avoidance System (OCAS) onto all future wind turbines. The OCAS lighting system minimizes nighttime lighting impacts attributed to the operation of FAA-required obstruction lighting by utilizing an audio-visual system in which lights are only turned on when planes are within a certain distance of airspace. This mitigation measure is infeasible because the FAA is currently unable to approve requests for OCAS and other audio-visual warning systems (AVWS) to light wind turbines or wind farms. However, the FAA is currently studying the application of these systems on wind turbine farms and expects to have standards regarding the use of AVWS in place by the end of 2011 (FAA 2010).

Because the measure listed above is infeasible, impacts would remain potentially significant and unavoidable. Chapter 4, Project Alternatives, provides a discussion of alternatives to the proposed project that would result in some reduced impacts associated with light and glare as compared to the proposed project.

2.1.7 Conclusion

The discussion below provides a synopsis of the conclusion reached in each of the above impact analyses, and the level of impact that would occur after mitigation measures are implemented.

Scenic Vistas

Development of small wind turbines and temporary MET facilities pursuant to the proposed Zoning Ordinance amendments would have the potential to result in significant adverse effects to scenic vistas. In addition, the proposed project would alleviate current restrictions on large wind turbine projects that may directly or indirectly affect scenic vistas in the County. Therefore, impacts would be potentially significant. The proposed project would also potentially contribute to cumulative impacts to scenic vistas. The would reduce direct and cumulative impacts to scenic vistas, but not to below a level of significance.

Scenic Resources

Development of small wind turbines and temporary MET facilities pursuant to the proposed Zoning Ordinance amendments would have the potential to result in significant adverse effects to scenic resources. In addition, the proposed project would alleviate current restrictions on large wind turbine projects that may directly or indirectly affect scenic resources in the County. Therefore, impacts would be potentially significant. The proposed project would also potentially contribute to cumulative impacts to scenic resources. The mitigation measures would reduce direct and cumulative impacts to scenic resources, but not to below a level of significance.

Visual Character and Quality

Development of small wind turbines and temporary MET facilities pursuant to the proposed Zoning Ordinance amendments would result in the potential degradation of the existing visual character or quality of a community. In addition, the proposed project would alleviate current restrictions on large wind turbine projects that may directly or indirectly affect existing visual character or quality. Therefore, impacts would be potentially significant. The proposed project would also potentially contribute to cumulatively considerable impacts to visual character or quality of a site and its surroundings. The mitigation measures would reduce direct and cumulative impacts to visual character or quality, but not to below a level of significance.

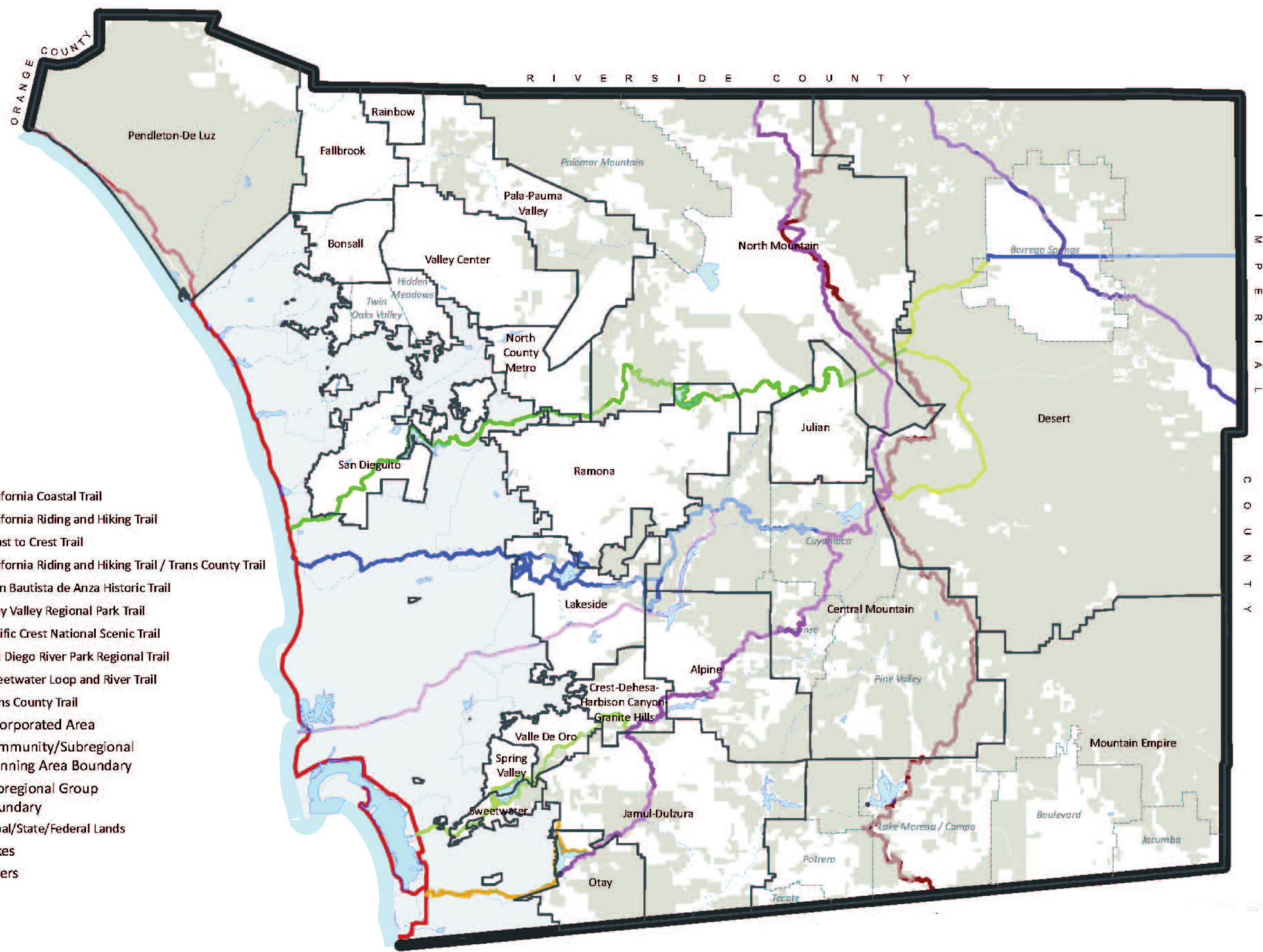
Light and Glare

Development of small wind turbines and temporary MET facilities pursuant to the proposed Zoning Ordinance amendments would not result in significant impacts from lighting or glare. Therefore, impacts would be less than significant. Development of large wind turbines pursuant

to the proposed Zoning Ordinance amendments would potentially result in significant impacts associated with FAA lighting requirements and shadow flicker effects. Additionally, the proposed project would result in a potentially significant cumulative impact associated with lighting prior to mitigation. Mitigation measures identified in Section 2.1.6.4 would reduce direct and cumulative impacts related to lighting, but not to a level below significant.

LEGEND

- California Coastal Trail
- California Riding and Hiking Trail
- Coast to Crest Trail
- California Riding and Hiking Trail / Trans County Trail
- Juan Bautista de Anza Historic Trail
- Otay Valley Regional Park Trail
- Pacific Crest National Scenic Trail
- San Diego River Park Regional Trail
- Sweetwater Loop and River Trail
- Trans County Trail
- Incorporated Area
- Community/Subregional Planning Area Boundary
- Subregional Group Boundary
- Tribal/State/Federal Lands
- Lakes
- Rivers



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